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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,159	12/18/2001	Jeffrey P. Milsap	MILSJE-2	6494
36528	7590	07/29/2005	EXAMINER	
STIENNON & STIENNON 612 W. MAIN ST., SUITE 201 P.O. BOX 1667 MADISON, WI 53701-1667			PENDLETON, BRIAN T	
			ART UNIT	PAPER NUMBER
			2644	

DATE MAILED: 07/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/024,159

**Applicant(s)**

MILSAP, JEFFREY P.

**Examiner**

Brian T. Pendleton

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18-December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 6, 7, are rejected under 35 U.S.C. 102(e) as being anticipated by Lobb et al, US Patent Application Publication 2002/0131608. Lobb discloses a method and system for providing digitally focused sound in figure 3a comprising a plurality of delay elements (4x), drivers (5x) and transducers (2x) for reproducing audio signal 30 at target area 100. As disclosed in paragraphs 33 and 34, the delays are chosen so that a coherent sound is produced at target area 100 and based on the physical position of each transducer in the array. Claim 1 is met. As to claims 2, 3, Lobb discloses that the apparatus is a planar array that can be concealed in a ceiling. Per claim 6, Lobb discloses in paragraph 42 a stereo embodiment which produces a left and right channel signal in two different target areas. As to claim 7, figure 8 discloses a class D amplifier.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lobb in view of Griffin et al, US Patent 5,020,155. Lobb does not explicitly disclose a room and indicia positioned with the room providing information for gaining access to the sound target. In figure 2, Griffin discloses an audio commentary system comprising art exhibits, an audio commentary box 40, and label 10. The label includes a visual description of the work and also contains the emitter outlets 20 for emitting the commentary via FM signals. The label provides information for gaining access to a particular sound. It would have been obvious to one of ordinary skill in the art at the time of invention to include indicia in a room in the Lobb invention, as taught by Griffin, for the purpose of guiding the user to the exact location where a particular audio signal would be heard. As to claim 4, one of ordinary skill in the art of audio distribution would have been motivated to provide a multiple exhibit system in a room from the disclosure of Lobb. As a result, it would have been obvious to one of ordinary skill in the art at the time of invention to supply a plurality of speaker arrays 10 in adjacent ceiling panels whereby power and data (audio) are communicated between the speaker arrays.

Claims 8, 9, 10, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lobb in view of Pompei, US Patent Application Publication 2001/0007591. Lobb discloses a speaker system comprising a transducer array 2x, a first audio and second audio source (see paragraph 42), a first and second target, means for determining the distance between each sound speaker and the first sound target and means for determining the distance between each sound speaker and the second sound target (see paragraphs 35-41), and delaying means for the first and second audio source (see figures 3A and 3B noting that a second audio source inherently has its own delaying system). Lobb does not disclose that there are at least 100 transducers and a means

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for adding together the first and second audio signal to create a combined signal and supply the combined signal to the speaker system. Lobb suggests the use of more than 81 transducers in paragraphs 27 and 28. It would have been obvious to one of ordinary skill in the art at the time of invention to use at least 100 transducers in the apparatus of Lobb for the purpose of increasing the gain of the audio signal heard at the target area. Lobb also does not disclose summing the first and second audio signals. Pompei discloses a parametric audio system comprising audio sources 102 which are summed by adder 100. The combined signal is delayed through delay unit 120 to create a localized sound using the transducer array 122. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Lobb by adding the first and second audio sources, as taught by Pompei, for the purpose of providing a multi-channel output without multiple loudspeakers. Claim 8 is met. As to claim 9, Lobb discloses a planar array 10. Regarding claim 10, Lobb teaches that the array can be formed in a ceiling. Per claim 13, Lobb discloses a class D amplifier.

Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lobb in view of Pompei, as applied to claim 8 above, and further in view of Griffin. The combination of Lobb and Pompei does not explicitly disclose a room and indicia positioned with the room providing information for gaining access to the sound target. In figure 2, Griffin discloses an audio commentary system comprising art exhibits, an audio commentary box 40, and label 10. The label includes a visual description of the work and also contains the emitter outlets 20 for emitting the commentary via FM signals. The label provides information for gaining access to a particular sound. It would have been obvious to one of ordinary skill in the art at the time of invention to include indicia in a room in the combination of Lobb and Pompei, as taught by

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Griffin, for the purpose of guiding the user to the exact location where a particular audio signal would be heard. Claim 12 is met. As to claim 11, one of ordinary skill in the art of audio distribution would have been motivated to provide a multiple exhibit system in a room from the disclosure of Lobb. As a result, it would have been obvious to one of ordinary skill in the art at the time of invention to supply a plurality of speaker arrays 10 in adjacent ceiling panels whereby power and data (audio) are communicated between the speaker arrays.

Claims 14-16, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lobb. Lobb discloses a method and system for providing digitally focused sound in figure 3a comprising a plurality of delay elements (4x), drivers (5x) and transducers (2x) for reproducing audio signal 30 at target area 100. As disclosed in paragraphs 33 and 34, the delays are chosen so that a coherent sound is produced at target area 100 and based on the physical position of each transducer in the array. The waves constructively interfere at the target area 100 to produce a sound having a first amplitude. Lobb does not explicitly disclose that the sound emitted from the transducers 2x have a second sound amplitude which is at least 20 db times less than the first sound amplitude. However, as suggested in paragraph 28, the more transducers in the array, the better the gain. An array of 100 transducers is proposed having a gain of 17 db. Therefore it would have been without unreasonable experimentation for one of ordinary skill in the art to produce an array 100 of several hundred transducers with a gain of over 20 db thereby emitting from each transducer a sound having a second sound amplitude at least 20 db times less than the first sound amplitude at the target area. Claim 14 is met. As to claim 15, there is disclosed planar array 100. Per claim 16, As to claim 4, one of ordinary skill in the art of audio distribution would have been motivated to provide a multiple exhibit system in a room from the

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disclosure of Lobb. As a result, it would have been obvious to one of ordinary skill in the art at the time of invention to supply a plurality of speaker arrays 10 in adjacent ceiling panels whereby power and data (audio) are communicated between the speaker arrays. Regarding claim 18, figure 8 discloses a class D amplifier. As to claim 19, Lobb discloses in paragraph 42 a stereo embodiment which produces a left and right channel signal in two different target areas. It would have been obvious to one of ordinary skill in the art at the time of invention to emit the additional channel at a fourth sound amplitude at least 20 db times less than a third sound amplitude at a second target area for the purpose of stereo reproduction of sound. Regarding claim 20, Lobb discloses an embodiment in figure 6 comprising a first audio source 30, CPU 62, array of speakers 2x, a first stack of data registers 7x and a first pointer array in memory controller 8x. As stated above, it would have been obvious to one of ordinary skill in the art at the time of invention to produce a sound by each speaker at least 20 db below the sound volume heard at the first target area 100.

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lobb in view of Griffin. Lobb does not explicitly disclose a room and indicia positioned with the room providing information for gaining access to the sound target. In figure 2, Griffin discloses an audio commentary system comprising art exhibits, an audio commentary box 40, and label 10. The label includes a visual description of the work and also contains the emitter outlets 20 for emitting the commentary via FM signals. The label provides information for gaining access to a particular sound. It would have been obvious to one of ordinary skill in the art at the time of invention to include indicia in a room in the Lobb invention, as taught by Griffin, for the purpose of guiding the user to the exact location where a particular audio signal would be heard.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lobb in view of Pompei. Lobb suggests a stereo embodiment comprising a first and second audio source which would require a first and second stack of data registers 7x, and a first and second pointer array 8x. Lobb does not disclose adding the samples of the first stack register and the second stack register corresponding to a particular speaker to produce a first and second localized region of sound. Pompei discloses a parametric audio system comprising audio sources 102 which are summed by adder 100. The combined signal is delayed through delay unit 120 to create a localized sound using the transducer array 122. It would have been obvious to one of ordinary skill in the art at the time of invention to modify Lobb by adding the samples of the first and second data registers (first and second audio sources), as taught by Pompei, for the purpose of providing a multi-channel output without multiple loudspeakers.

Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lobb in view of Cohen et al, US Patent Application Publication 2003/0031333. Lobb suggests an alternative embodiment in figure 7C which has a computer for continuously changing the focus of the speaker array 100 but does not disclose a microphone mounted to a listener in wireless communication with the CPU, the CPU determining the location of the microphone and thus the desired position of the target area. Cohen discloses a system for optimizing audio comprising microphones 28-31 in remote position sensor 27 (see figures 8 and 11). The sensor 27 is used by a listener 11 to measure his/her position with respect to speakers 12-16. An interrogating frequency is sent by the processor 35 (see figure 12). As disclosed in paragraph 46, once the listener position is measured, the sound system manipulates the sound of each speaker to shift the focus (sweet spot) of the speakers to the listener position. Therefore it was well known in the art



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to use a microphone with an interrogating frequency to determine the location of the microphone and thus listener position for the purpose of audio reproduction. Hence, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Lobb to include the microphone/CPU combination of Cohen et al for the purpose of changing the focus of the speaker array 100 thereby ensuring that the target area is always directed at a particular listener.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lobb in view of Pompei, as applied to claim 21 above, and further in view of Hirohama, US Patent 5,797,125. The combination of Lobb and Pompei does not disclose that the first and second audio sources includes speech in a first language and speech is a second different language. Hirohama discloses a voice guide system for use in an exhibition room comprising first and second audio sources in different languages in figure 1. The audio sources are emitted in different areas 2A-2N. The apparatus increased the functionality of sound exhibit systems by providing more than one language and would attract more international visitors. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to produce first and second audio sources with different languages, as taught by Hirohama, in the combination of Lobb and Pompei for the purpose of accommodating a range of visitor languages in a museum.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian T. Pendleton whose telephone number is (571) 272-7527. The examiner can normally be reached on M-F 7-4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian T. Pendleton  
Examiner  
Art Unit 2644



btp